
Polygala riograndensis (Polygalaceae), a New Species from Southern Brazil

Raquel Lüdtke and Silvia Teresinha Sfoggia Miotto

Departamento de Botânica, Universidade Federal do Rio Grande do Sul, Av. Bento Gonçalves, 9500, Porto Alegre, Rio Grande do Sul, 91501-970, Brasil. raquelludtke@yahoo.com.br; stsmiotto@terra.com.br

ABSTRACT. *Polygala riograndensis* Lüdtke & Miotto (Polygalaceae) is a new species from the Brazilian flora. This species is included in the subgenus *Polygala* L., which has the largest number of species in the Brazilian territory. *Polygala riograndensis* is closely related to *P. campestris* Gardner, but it is set apart mainly by the stems sinuate, capsules winged, leaves petiolate and glabrous, and by the crest of the keel with 6 to 7 lobes that are simple or bifid. This species was recognized during the revision of the genus *Polygala* in Rio Grande do Sul state. Morphological description, illustration, and observations about habitat and distribution are presented.

RESUMO. *Polygala riograndensis* Lüdtke & Miotto (Polygalaceae) é uma nova espécie descrita para a flora brasileira. Esta espécie está incluída no subgênero *Polygala* L. que abrange o maior número de espécies no território brasileiro. *Polygala riograndensis* é afim de *P. campestris* Gardner, se diferenciando desta por apresentar os caules sinuosos, cápsula alada, folhas pecioladas e glabras e crista da carena dividida em 6 a 7 lobos. Esta espécie foi reconhecida durante a revisão taxonômica do gênero *Polygala* no Rio Grande do Sul. São fornecidas descrição morfológica, ilustração e observações sobre habitats e distribuição.

Key words: Brazil, *Polygala*, Polygalaceae, Rio Grande do Sul.

With about 725 species, *Polygala* L. is the largest genus of Polygalaceae. Most species are distributed in the tropical regions, with an abundant distribution in the Central and South Americas, Africa, and Asia (Paiva, 1998).

The genus *Polygala* is represented in the Brazilian flora by 110 species and 30 varieties (Marques, 2003) and can be distinguished from other genera of Polygalaceae by the dehiscent capsule always with two seeds.

Several taxonomic revisions of the genus *Polygala* were realized in the past 20 years in Brazil, such as

Marques (1984, 1988, 2003), Lüdtke and Miotto (2004), and Aguiar (2005).

In the Rio Grande do Sul state, 24 species of *Polygala* were recognized, with wide distribution occurring in the most diverse environments. During the revision of the genus *Polygala* in the state of Rio Grande do Sul (Lüdtke & Miotto, 2004), a new species was recognized.

***Polygala riograndensis* Lüdtke & Miotto, sp. nov.**

TYPE: Brazil, Rio Grande do Sul: Porto Alegre, Morro da Polícia, 10 Oct. 2003, R. Lüdtke 190 (holotype, ICN). Figure 1.

Polygala riograndensis valde proxima *P. campestris* Gardner praeципue habitu, absentia glandularum, bracteis et bracteolis deciduis et racemis pedunculatis et cylindricis. Sed caulis sinuosus, foliis petiolatis et glabris et crista carinae 6 ad 7 lobis simplicibus vel bifidis instructis et capsulis alatis differt.

Herbs decumbent, eglandular, 11–34 cm high; stems sinuate, cylindrical at base, quadrangular at apex, glabrate or densely pilose, with short trichomes, ca. 0.5–1 mm. Leaves petiolate, petiole 1–2 mm, alternate, membranous, glabrous, orbicular, widely ovate, or widely elliptic, 3–10 × 2.5–7 mm, apex apiculate, acuminate, or cuspidate, base acute, rounded, or obtuse, margins entire; bracts deciduous, lanceolate, subulate, 1.1–1.8 mm, margins ciliate; bracteoles deciduous, lanceolate, margins entire. Racemes pedunculate, terminal or axillary, narrowly cylindrical, 2–12 cm; floral rachis glabrous. Flowers 2–2.5 mm, white or greenish white, pedicels 0.5–1.2 mm, glabrous, pendulous in fruit; external sepals unequal, inserted at the same point, glabrous, apex acute, margins entire, 1 sepal ovate to elliptic, 1.1–1.5 mm, 2 sepals elliptic, 1–1.2 mm; internal sepals glabrous, elliptic, 1.5–2 mm, apex rounded, cucullate, base attenuate; lateral petals glabrous, elliptic, 1.5–2 mm, apex rounded, keel crested, crest 0.8–1 mm, with 6 to 7 lobes simple or bifid; ovary glabrous, fusiform. Capsule glabrous, ovate to orbicular or widely oblong, 1.3–1.8 mm, lacking stipe, winged,




Figure 1. *Polygala riograndensis* Lüdtke & Miotto. —A. Habit. —B. Bract and bracteole. —C. Calyx in lateral view. —D, E. External sepals. —F. Internal sepal. —G. Longitudinal section of corolla and androecium. —H. Gynoecium in longitudinal view. —I. Capsule. —J. Seed. Drawn from the holotype, R. Lüdtke 190 (ICN).

with one wing more developed; seeds finely pubescent, oblong, 1–1.3 mm, foveolate, lightly reniform, with membranous appendage totally bilobed, ca. 3/4 of seed length.

Phenology. Plants with flowers and fruit occur from September to November.

Etymology. The epithet is derived from Rio Grande do Sul state.

Habitat and distribution. *Polygala riograndensis* has been collected in rocky fields and granite hills, limited to the central region of the Rio Grande do Sul state.

Polygala riograndensis is included in the subgenus *Polygala*, which is recognized by the flowers with crested keel, and is represented by approximately 88 species and 22 varieties in the Brazilian flora (Marques, 1988).

Polygala riograndensis is closely related to *P. campestris*, especially by the resemblance in the habit, the absence of glands, the bracts and bracteoles deciduous, and by the racemes pedunculate and cylindrical. However, *P. riograndensis* is set apart from *P. campestris* mainly by the stems sinuate, capsules winged, leaves petiolate and glabrous, and by the crest of the keel with 6 to 7 lobes that are simple or bifid. All specimens of *P. campestris* collected in the Rio Grande do Sul state present sessile and pilose leaves, the crest of the keel with 8 to 12 simple lobes, and capsules lacking wings. Although both species are present in the Rio Grande do Sul flora, they have a completely different distribution and are not sympatric species. *Polygala campestris* is limited to the high fields of the northeastern region, while *P. riograndensis* occurs only in the rocky fields and granite hills in the central region of the Rio Grande do Sul state.

Paratypes. BRAZIL. RIO GRANDE DO SUL: Arroio dos Ratos, Faz. Faxinal, O. Bueno 3694 (HAS); Canoas, perto de

Porto Alegre, G. A. Malme 128 (S); Encruzilhada do Sul, Est. Exp., 25 Nov. 1972, A. Pott s.n. (BLA 8018, ICN 20917); Guaíba, Faz. São Maximiano, BR 116, km 307, 17 Sep. 2006, E. Freitas s.n. (ICN 144938); Itaara, Reserva Biol. do Ibiú-Mirim, Campo dos Barcelos, M. L. Abruzzi 1840 (HAS), N. Silveira 6870, 6902 (HAS), O. Bueno 5661, 6063 (HAS); Lavras do Sul, Mina Volta Grande, M. Sobral 3121 (ICN); Porto Alegre, A. Pott 99 (BLA), 8 Sep. 1971, A. Pott s.n. (BLA 11120), 18 Sep. 1987, F. M. S. Vianna s.n. (ICN 80333); Morro da Polícia, G. Beneton 76 (HAS), R. Lüdtke 575 (ICN, K, MO), R. Lüdtke 577 (ICN), G. Malme 570 (S), B. Rambo 27268 (PACA), 27 Oct. 1946, B. Rambo s.n. (ICN 16592); Vila Manresa, B. Rambo 7109, 33847, 38045 (PACA); Viamão, Parque Est. de Itapuã, J. Mattos & N. Silveira 26963 (HAS).

Acknowledgments. We thank Tarciso Filgueiras for the Latin description, Rafael Trevisan for the help with the figure, and Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES) and Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) for the financial support of our studies.

Literature Cited

- Aguiar, A. C. A. 2005. Estudos Taxonômicos sobre o Gênero *Polygala* L., Subgênero *Hebeclada* (Chodat) Blake (Polygalaceae) no Brasil. Tese de Mestrado em Biologia Vegetal—UNICAMP, São Paulo.
- Lüdtke, R. & S. T. S. Miotto. 2004. O gênero *Polygala* L. (Polygalaceae) no Rio Grande do Sul, Brasil. Revista Brasil. Bioci. 2(2): 49–102.
- Marques, M. C. M. 1984. Polígalas do Brasil—I. Seção *Acanthocladus* (Klotzsch ex Hassk.) Chodat. (Polygalaceae). Rodriguésia. 36(60): 3–10.
- . 1988. Polígalas do Brasil—V. Seção *Polygala* (Polygalaceae). Arch. Jard. Bot. Rio de Janeiro. 29: 1–114.
- . 2003. Estudo Taxonômico do Gênero *Polygala* L. Subgênero *Ligustrina* (Chodat) Paiva (Polygalaceae). Tese de Doutorado em Ciências Biológicas (Botânica)—UFRJ, Rio de Janeiro.
- Paiva, J. A. R. 1998. Polygalarum Africanarum et Madagascariensium prodomus atque gerontogaei generis *Heterosamara* Kuntze, a genere *Polygala* segregati et a nobis denuo recepti, synopsis monographica. Fontqueria, Vol. 50.